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LANL-YMP-QP-08.1, R5

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## IDENTIFICATION AND CONTROL OF SAMPLES

### ***LOS ALAMOS QUALITY PROGRAM***



#### APPROVAL FOR RELEASE

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**Los Alamos**

Yucca Mountain Site

Characterization Project

## HISTORY OF REVISIONS

| REVISION NO. | EFFECTIVE DATE | PAGES REVISED | REASON FOR CHANGE   |
|--------------|----------------|---------------|---|
| R0           | 05/15/89       | N/A           | Initial procedure.  |
| R1           | 10/10/89       | All           | To better clarify the process.                            |
| R2           | 02/28/92       | All           | Complete rewrite to streamline the process.               |
| R3           | 01/31/94       | All           | Rewrite to address QARD requirements.                     |
| R4           | 07/13/94       | All           | To address QARD requirements and the RTN review comments. |
| R5           | 08/08/96       | All           | Minor non-substantive editorial changes.                  |

# IDENTIFICATION AND CONTROL OF SAMPLES

## 1.0 PURPOSE

This procedure describes the process for originating, identifying, storing, handling, shipping, and archiving Los Alamos National Laboratory (Los Alamos) Yucca Mountain Site Characterization Project (YMP) samples.

## 2.0 SCOPE

2.1 This procedure governs samples used by Los Alamos YMP scientific investigations.

2.2 This procedure applies to Los Alamos personnel and subcontractor YMP personnel (hereafter referred to as YMP personnel) working under The Los Alamos National Laboratory YMP quality assurance program.

## 3.0 REFERENCES

LANL-YMP-QP-03.5, Documenting Scientific Investigations

LANL-YMP-QP-17.6, Records Management

YAP-15.1Q, Control of Nonconformances

YAP-SII.1Q, Submittal, Review, and Approval of Requests for Yucca Mountain Site Characterization Project Geologic Specimens

YAP-SII.2Q, Requesting Samples for Examination at the Yucca Mountain Site Characterization Project Sample Management Facility

YAP-SII.4Q, The Collection, Submission, and Documentation of Non-Core and Non-Cuttings Samples to the Sample Management Facility for Site Characterization

## 4.0 DEFINITIONS

### 4.1 Sample

A sample is part of a population whose properties are studied to gain information about the whole or group. Examples of samples include surface and subsurface rocks and fluids, drill cores, cuttings, muck, gases, and biota. For Los Alamos purposes, sample is synonymous with specimen.

### 4.2 Sample Management Facility (SMF)

The SMF is the facility used for the documentation, storage and control of samples, of specimens, and of remnants collected and dispersed for analysis and evaluation by users. The SMF consists of a physical facility and equipment designed to effectively process and conserve preserved collected samples.

### 4.3 Sample Overview Committee (SOC)

The SOC is a YMP-level committee composed of members from organizations performing YMP work. The SOC members review specimen requests and, based on present and future YMP needs, make recommendations on specimen allocations.

## 5.0 RESPONSIBILITIES

The following personnel are responsible for activities identified in Section 6.0 of this procedure:

- Los Alamos YMP personnel who synthesize, collect, use or otherwise handle samples.

## 6.0 PROCEDURE

The use of this procedure must be controlled as follows:

- If this procedure cannot be implemented as written, YMP personnel should notify appropriate supervision. If it is determined that a portion of the work cannot be accomplished as described in this QP, or would result in an undesirable situation, that portion of the work will be stopped and not resumed until this procedure is modified or replaced by a new document that reflects the current work practice.
- YMP personnel may use copies of this procedure printed from the controlled document electronic file; however, YMP personnel are responsible for assuring that the correct revision of this procedure is used.
- When this procedure becomes obsolete or superseded, it must be destroyed or marked “superseded” to ensure that this document is not used to perform work.

**NOTE:** For guidance concerning sampling issues and interactions with the Project Office SMF, contact the Los Alamos SOC representative.

### 6.1 Sample Origination

6.1.1 For samples collected in the field, **YMP personnel** will document the method of collection, the field location, and specifics on sample orientation relative to the location that was sampled, if appropriate, in a Los Alamos YMP scientific notebook in accordance with QP-03.5, or in accordance with an approved detailed technical procedure.

6.1.1.1 **YMP personnel** will use the identification labels provided by the SMF in accordance with YAP-SII.4Q. YMP personnel may also use their own unique identifiers, providing they maintain traceability to the SMF number. Derivatives (pieces) do not need SMF identification labels, but must be traceable to the original sample. A Sample Collection Report must be submitted to the Sample Management Facility in accordance with YAP-SII.4Q.

- 6.1.2 When **YMP personnel** select and request samples from the Sample Management Facility, they follow YAP-SII.1Q and YAP-SII.2Q. YMP personnel may use their own identifier providing they maintain traceability to the Sample Management Facility unique identifier.
- 6.1.3 When samples are produced in a laboratory, **YMP personnel** will document the existence of the sample and method of preparation (or reference to the appropriate detailed technical procedure) in a Los Alamos YMP scientific notebook.
- 6.1.4 When samples are received from other YMP personnel or other participants, **YMP personnel** will document the receipt in a Los Alamos YMP scientific notebook. The notebook entry includes the original unique identifier, a uniquely traceable identifier assigned at Los Alamos, and/or the Sample Management Facility identifier (if available); the analytical history of the sample may be included if appropriate.

**NOTE:** Transfer of samples to anyone outside of the original collector's/recipient's study plan requires SOC approval as described in YAP-SII.1Q.

## 6.2 Sample Identification and Traceability

- 6.2.1 **YMP personnel** ensure sample identification and control is adequately documented to permit tracking a sample and its derivatives from its origination, through all analytical or other processing, to its present location or final disposition. Laboratory separations and derivatives must be traceable to their parent sample. Prior to using a sample, **YMP personnel** will document the identification of the sample in a Los Alamos scientific notebook. If requirement documents (such as the Site Characterization Plan, test plans, study plans, or job packages) contain specific identification or traceability requirements (such as identification or traceability of the sample to applicable study plan, site characterization activity, or other records), those specific controls shall be implemented.
- 6.2.2 **YMP personnel** will label a sample by placing a unique identifier on the sample or its container by the use of physical markings. If physical markings are either impractical or insufficient, other appropriate means should be used (e.g. controls established by detailed technical procedures). If used, physical markings must: be applied using materials and methods that provide a clear and legible identification; not detrimentally affect the sample content or form; be transferred to each identified sample part when the sample is subdivided; not be obliterated or hidden by surface treatments or sample preparation unless other means of identification are substituted.

## 6.3 Nonconforming Samples

Samples that do not meet requirements specified in work controlling documents (e.g., job packages, detailed technical procedures), samples that lose traceability, or samples that the YMP personnel determines have been compromised by improper storage or

handling, are considered to be nonconforming samples. **YMP personnel** will control the use of nonconforming samples in accordance with YAP-15.1Q. **YMP personnel** will contact a Quality Assurance Liaison when initiating a nonconformance report.

## 6.4 Sample Storage

6.4.1 **YMP personnel** will store samples under physical conditions that are appropriate for the sample's intended purpose and expected storage life and document special storage requirements in a Los Alamos YMP scientific notebook or detailed technical procedure. **YMP personnel** will ensure that samples are not used beyond the sample's storage life or intended use.

6.4.2 Whenever a sample is stored at Los Alamos or a Los Alamos subcontractor facility, **YMP personnel** will document in a Los Alamos YMP scientific notebook the analytical history and chain of custody of the sample.

6.4.2.1 **YMP personnel** will document the removal of a sample from their custody in a Los Alamos YMP scientific notebook.

6.4.3 **YMP personnel** will maintain or replace identification markings that have been damaged, and protects identification markings that may deteriorate during environmental exposure. **YMP personnel** will ensure that sample identification is maintained during storage.

6.4.4 If a sample deteriorates or is consumed, **YMP personnel** record that information in a Los Alamos YMP scientific notebook.

## 6.5 Sample Handling and Shipping

6.5.1 **YMP personnel** will identify methods, when appropriate, for cleaning a sample. When cleaning a sample, **YMP personnel** will follow a detailed technical procedure, or will record the process in a Los Alamos YMP scientific notebook.

6.5.2 Before shipping a sample, **YMP personnel** will specify and provide any special equipment (such as containers) or protective environments (such as inert gas, or moisture and temperature limits) and documents methods of handling environmental or safety considerations or other items of concern in a Los Alamos YMP scientific notebook or in accordance with a detailed technical procedure. Special controls for handling, storage, cleaning, packaging, shipping and preservation are considered for critical, sensitive, perishable, or high value samples.

6.5.3 When shipping a sample, **YMP personnel** will record in a Los Alamos YMP scientific notebook, the unique identifier for each sample or shipping container. If samples are shipped by commercial carrier, **YMP personnel** also record the bill of lading number for the shipment. The presence of special environments or the need for special controls is indicated, as appropriate.

- 6.5.4 **YMP personnel** will determine if any samples received at Los Alamos are unacceptable for the purpose for which they were requested. Samples that have been damaged or have deteriorated may be returned to the sender with documentation of how the sample was received. **YMP personnel** will record both receipt and return of samples in a Los Alamos YMP scientific notebook.

## 6.6 Sample Archiving

- 6.6.1 **YMP personnel** will return sample no longer needed for study on the YMP to the Sample Management Facility in accordance with YAP-SII.1Q. When samples cannot be returned to the Sample Management Facility (e.g. because of contamination from studies) documentation will be provided to the Sample Management Facility on the archiving or disposition of these samples.

## 7.0 RECORDS

Copies of Los Alamos YMP scientific notebooks are submitted to a RPC in accordance with QP-03.5 and QP-17.6.

## 8.0 TRAINING REQUIREMENTS

- 8.1 Prior to conducting work described in Section 6.0, YMP personnel require training to this procedure. Training is accomplished by "read-only."
- 8.2 Personnel may also need training to the YMP Administrative Procedures YAP-15.1Q, YAP-SII.1Q, YAP-SII.2Q, and YAP-SII.4Q as appropriate.

## 9.0 ATTACHMENTS

N/A